May 23, 2007

By Electronic Filing

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 20554

Re: Written *Ex Parte* Filing, ET Dkt Nos. 04-151, 02-380, & 98-237; WT Dkt No. 05-96

Dear Ms. Dortch:

The Satellite Industry Association ("SIA") hereby supplements the record relating to its pending Petition for Partial Reconsideration[1] in the above-referenced proceeding.[2] As discussed herein, the evidence before the Commission demonstrates that revisions to the *Order* are needed to ensure that critical, long-standing C-band satellite services are protected from harmful interference.

SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, remote sensing operators, and ground equipment suppliers. SIA is the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business.[3]

The importance of ensuring that reliable Fixed-Satellite Services ("FSS") can continue to be provided in C-band spectrum cannot be overstated. C-band frequencies are used

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[1] Petition For Partial Reconsideration of the Satellite Industry Association, ET Docket No. 04-151, WT Docket No. 05-96, ET Docket No. 02-380, ET Docket No. 98-237 (filed June 10, 2005) ("SIA Petition").

[2] *See* Wireless Operations in the 3650-3700 MHz Band, Rules for Wireless Broadband Services in the 3650-3700 MHz Band, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3GHz Band, Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band, *Report and Order and Memorandum Opinion and Order*, 20 FCC Rcd 6502 (2005) ("*Order*").

[3] SIA Executive Members include: Arrowhead Global Solutions Inc.; Artel Inc.; The Boeing Company; Datapath, Inc., The DIRECTV Group; Globalstar, Inc; Hughes Network Systems LLC; ICO Global Communications; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Satellite LLC; Lockheed Martin Corp.; Loral Space & Communications Inc.; Mobile Satellite Ventures LP; Northrop Grumman Corporation; SES Americom, Inc.; and TerreStar Networks Inc.; and Associate Members include: ATK Inc.; EchoStar Satellite LLC; EMC Inc.; Eutelsat Inc.; Inmarsat Inc.; IOT Systems; Marshall Communications Corp.; New Skies Satellites, Inc.; Spacecom Corp.; Stratos Global Corp; SWE-DISH Space Corp; and WildBlue Communications, Inc.

to provide a broad range of essential services, including television and broadband services, distance learning, telemedicine, backhaul of mobile telephony and Internet traffic, data networks for businesses, and government and emergency communications links. No alternative bands exist today with the signal quality, spectrum efficiency, availability and reach of the C-band.

For example, in their letter in support of the SIA Petition, Fox Broadcasting Company, Fox Cable Networks, and Home Box Office, Inc. explain that they rely on C-band satellite services for distribution of their news, sports, and entertainment programming to cable headends that serve tens of millions of U.S. subscribers.[4] These consumers would be directly affected by interference from new terrestrial wireless operations in the 3650-3700 MHz band. *Id.* at 1. No party to this proceeding questions the need to protect C-band satellite operations.[5]

As SIA has explained, however, "the large power differential between immediately adjacent services authorized in the *Order* is a recipe for disaster, particularly considering the unique sensitivity and critical importance of affected satellite operations and the novel characteristics of new operations in the 3650-3700 MHz band."[6] The measures in the *Order* to protect C-band satellite services are simply inadequate to prevent disruption of services to customers. The Commission must revise the rules by: (1) tightening the out of band emissions ("OOBE") limits to -71.25 dBW/MHz, the level originally proposed by the Commission;[7] and (2) adopting lower power limits for the upper 25 MHz of the 3650-3700 MHz band to guard against saturation of a C-band earth station's low-noise block converter ("LNB").

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[4] Letter of Fox Broadcasting Company, Fox Cable Networks, and Home Box Office, Inc., ET Docket Nos. 04-151, 02-380, 98-237 and WT Docket No. 05-96 (filed August 11, 2005) ("Fox/HBO Letter") at 1-2.

[5] To the contrary, a number of parties, including those with interests in providing terrestrial wireless service, have expressly endorsed the importance of protecting C-band satellite services. *See, e.g.*, *Ex Parte* Filing by the Wireless Internet Service Providers Association, ET Docket Nos. 04-151, 02-380, 98-237 and WT Docket No. 05-96 (filed July 24, 2006) at ¶ 7 (acknowledging that "adjacent to the 3650 band, there are mission critical business requirements" and confirming the need "to assure that adjacent band primary users remain unaffected"); *Ex Parte* Filing by TowerStream, Corp., ET Docket Nos. 04-151, 02-380, 98-237 and WT Docket No. 05-96 (filed March 13, 2007) at 2 (Towerstream is "aware of potential interference which may be caused to existing incumbent satellite operators" and supports protection of incumbent operations); *Ex Parte* Filing by The Boeing Company, ET Docket Nos. 04-151, 02-380, 98-237 and WT Docket No. 05-96 (filed October 27, 2006) at 2 (urging the Commission "to make adjustments in its rules to ensure that wireless operations in the band do not cause harmful interference to C-band satellite earth stations").

[6] Reply of the Satellite Industry Association to Oppositions to Petition For Partial Reconsideration, ET Docket No. 04-151, WT Docket No. 05-96, ET Docket No. 02-380, ET Docket No. 98-237 (filed August 22, 2005) ("SIA Reply") at 1-2.

[7] *See* Wireless Operations in the 3650-3700 MHz Band, Rules for Wireless Broadband Services in the 3650-3700 MHz Band, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3GHz Band, Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band, *Notice of Proposed Rulemaking*, 19 FCC Rcd 7545, 7565 (2004) ("*NPRM*").

OOBE Limits: The *Order* specified an OOBE suppression formula of 43 +10 log(P) dB, where P is the transmit power of the device expressed in watts. *Order* at ¶ 75. The SIA Petition demonstrated that this limit is inadequate and would have a severe negative impact on C-band FSS earth stations. SIA proposed instead that OOBE be subject to a limit of −71.25 dBW/MHz, which is equivalent to the limit applicable under Part 15 of the Commission's Rules to unlicensed devices, and which was the original limit proposed in the *NPRM*.

SIA later supplemented its Petition by providing a further detailed technical analysis of the impact on FSS earth station operations of OOBE from terrestrial wireless operations in the adjacent spectrum.[8] Specifically, SIA showed that because FSS earth stations cannot filter out emissions that fall within the 3700-4200 MHz band used by FSS, OOBE levels by terrestrial wireless operations must be low enough not to impact FSS operations. *Id*. at 6. SIA provided calculations demonstrating that terrestrial wireless transmissions that comply with the OOBE level specified by the Commission would cause negative margins for FSS services in many cases, even with a 1000 meter separation between the earth station antenna and the wireless device. *Id*. at 7-8.

These findings are undisputed in the record. In subsequent submissions, WCAI and Motorola both object to SIA's proposed OOBE limit, but provide no technical documentation in support of their positions. Each party advocates the use of the ETSI equipment standard, a tiered approach that has stricter limits as the subject frequency moves further away from the 3700 MHz edge between bands.[9] The ETSI standard, however, would be an improvement over the rules adopted in the *Order* only for frequencies more than 15 MHz from the band edge, and not adequate until beyond 3770 MHz. In the portion of the band closest to 3650-3700 MHz, the ETSI standard is no stricter than the limit adopted by the Commission, and would therefore result in loss of margin for satellite operations in that segment. Such an outcome would clearly be contrary to the public interest.

LNB Saturation: The SIA Petition also explained that the *Order* is flawed due to the Commission's failure to take steps to address the risk that high-power terrestrial operations immediately adjacent to the 3700-4200 MHz band could saturate C-band earth stations' LNBs, leading to crippling interference. The SIA *Ex Parte* also provided detailed technical data concerning this problem. Specifically, SIA showed that given the extreme difference in the power levels of a terrestrial signal and a satellite signal, the LNB saturation point would be

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8 *Ex Parte* Presentation of the Satellite Industry Association, ET Docket No. 04-151, WT Docket No. 05-96, ET Docket No. 02-380, ET Docket No. 98-237 (May 25, 2006) ("SIA *Ex Parte*").

9 *Ex Parte* Presentation of the WCA International, ET Docket No. 04-151 (August 1, 2006) at 9 ("WCAI *Ex Parte*") (endorsing limits of 43 + 10log(P) dB from 0 to 15 MHz above the 3700 MHz band edge, 60 + 10log(P) dB from 15 to 70 MHz above the 3700 MHz band edge, and 70 + 10log(P) dB beyond 70 MHz above the 3700 MHz band edge); Motorola *Ex Parte* Presentation of the Satellite Industry Association, ET Docket No. 04-151 (June 27, 2006) at 6 (same).

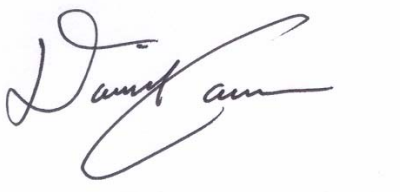
exceeded under typical conditions. SIA *Ex Parte* at 12. Furthermore, SIA demonstrated that the addition of band-pass filters would not solve the problem. *Id*. at 13-22. In order to ameliorate this problem, SIA showed that the Commission should prohibit use of full power terrestrial wireless devices in the upper 25 MHz of the 3650-3700 MHz band.

Again, the detailed technical evidence that SIA has provided on this point has not been refuted. WCAI suggests that the Commission should reject SIA's claim concerning LNB saturation, but makes no attempt to discuss, much less dispute, SIA's supporting analysis. *See* WCAI *Ex Parte* at 9. Based on the record, the Commission must conclude that the risk to FSS earth stations from LNB saturation requires limiting the power levels of terrestrial devices operating in the upper 25 MHz portion of the 3650-3700 MHz band.

Accordingly, SIA urges the Commission to revise its rules as discussed herein to protect critical C-band FSS operations.

Respectfully submitted,

SATELLITE INDUSTRY ASSOCIATION



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